

THE RESOURCES AGENCY OF CALIFORNIA  
DEPARTMENT OF FISH AND GAME  
MARINE RESOURCES OPERATIONS

REPORT FOR THE MONTH OF JUNE 1964

Checks at Imperial Beach Pier indicate heavy fisherman use and good success. Because of the newly-installed reef around its periphery, fishermen are catching good numbers of rocky bottom fishes: kelp bass, sand bass, yellowtail, rockfish, white seabass and sculpin.

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The preseason albacore survey conducted cooperatively with the BCF terminated on a successful note on 23 June. The N.B. SCOFIELD took its first fish of the season on 9 June about 540 miles west of Pt. Buchon and then found albacore in numbers near San Juan Seamount toward the cruise's end. A small commercial fleet immediately began working the area and reported good catches.

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Kelp and sand bass, barracuda and yellowtail catches dropped considerably from a year ago. April and May water temperatures were well below average, probably the chief cause of lower catches.

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A school of silver salmon continues to frequent Los Angeles Harbor, yielding small catches daily. All told, several hundred fish have been landed, mostly in the vicinity of a bait receiver anchored within the harbor.

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Our preseason shrimp cruise in April and our monitoring of the fishery in May revealed that recruitment had been low and that the total population size was down. As a result the Department recommended that the quota be lowered from 2 million to 500,000 pounds. The Commission took favorable action but requested an immediate re-survey aboard a commercial vessel.

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During the first two weeks of June, relatively smooth and clear water provided favorable abalone diving conditions in the Morro Bay area. Divers were able to work most of this period and many made good catches. Fifteen boats operated.

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One of San Francisco's poorest seasons closed June 30. Landings through April totaled 972,041 pounds opposed to 1962-63's catch of 1,309,359 pounds.

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Intensive blue rockfish tagging continued at the Monterey Breakwater. A total of 190 juveniles were tagged.

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Despite rough weather, over 6,000 tons of jack mackerel were caught, twice the June 1963 landings. Most fish came from Cortez Bank. The mackerel catch is still about 10,000 tons behind last year at this time.

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Report of the Third Meeting of the Pacific Coast Statistical Conference

June 15 through 17, 1964

Olympia, Washington

Approximately 20 to 25 attended the various sessions with representation from Alaska, Canada, Washington, Oregon, California, the Fisheries Research Institute, and the International Halibut Commission. Agenda items were Collection of Sport Fishery Statistics and Development of Sampling Techniques, Aspects of Gear Limitation, Use of Data Processing Techniques in Prediction of Fish Populations and the Availability of Computer Programs to Solve Fishery Problems, Review of Coastwise Exchange of Data and Publication of Catch Statistics.

Washington discussed their program for collecting data on sport salmon take through use of special cards available to the sportsman for entering his salmon catch. Postage is provided for return of these cards; they are then randomly selected, and the fisherman is subsequently interviewed to obtain more information. This program has developed into a more extensive undertaking than originally anticipated. Other sport fishery statistics collecting techniques were discussed.

Aspects of gear limitation and its impact on economics in the salmon and halibut fishery were reviewed. Catch limitations, necessary for adequate protection of stocks, have brought about economic hardship in some fisheries in the North. Orderly exploitation of a managed fishery so as not to bring about economic chaos is of great importance. The State of Washington is considering a law to limit the number of gill net boats exploiting the Columbia River salmon fisheries.

California chaired the session on use of data processing techniques in prediction of fish populations and the availability of computer programs to solve fishery problems was discussed at some length. Examples of data processing techniques to make predictions were given. In the Canadian Coho salmon troll fishery, the total seasonal catch in certain areas may be predicted based on catches of the second and third week.

Different requirements and different methods of compiling figures within a state were reviewed. These differences make exchange of data difficult.

Pacific Marine Fishery problems of compiling an up-to-date data series and the Technical Committee of the Pacific Salmon Interagency Council's need for salmon catch and effort information were discussed. A bibliography of available catch figures for each state and Canada will be prepared to assist these groups.

Oregon and Washington plan to utilize a fishing boat numbering system and may develop one that will be compatible with California's. This is an aid to achieving a universal coastwise numbering system. It is hoped that a discussion of this would continue at the next working session.

This informal workshop meeting was most beneficial to the participants and their respective organizations. New ideas; on how to accomplish existing work better and faster, recent advances in a rapidly changing data processing field and opportunity to discuss ways we can assist in supplying data to the Pacific Salmon Interagency Council as created by the Governor's Salmon Conference should result

in continued value to the State.

Future meetings of this type will facilitate coastwise cooperation.---- E.C.  
Greenhood, Biostatistical Supervisor.

## Report of International Trawl Fishery Committee

The fifth annual meeting of the Technical Sub-Committee of the International Trawl Fisheries Committee was held in the offices of the California Department of Fish and Game, Menlo Park, California, June 23 and 24, 1964.

The Fisheries Research Board of Canada, Washington Department of Fisheries, Fish Commission of Oregon, and the California Department of Fish and Game were represented at the meeting. All personnel of the bottomfish program attended the meeting and participated in the meetings. Mr. Gary Smith, California Department of Fish and Game, was appointed Recording Secretary for the current meeting.

Petrable sole, dover sole, lingcod, Pacific cod, and Pacific Ocean perch were discussed in detail. Considerable discussion centered on the petrale stocks off the Washington and Canadian coast and the effects of the restrictions on the winter fishery. The Sub-Committee reaffirmed that it will provide an analysis of the restriction following the 1966-67 winter fishery, as requested by the parent committee at last year's annual meeting. Canada requested that the California staff provide a similar analysis of the unrestricted California fishery.

All agencies noted that there was a big backlog of English sole tagging information in the files which needed immediate analysis. It was agreed that a four part report be produced, each agency contributing its own analysis, and tied together by a concise summary. A date of July 1, 1965, was suggested as a time for submission of this report.

California also reported that a paper summarizing the rockfish species composition sampling, terminated December 31, 1965, would be presented at the fall meeting of the Pacific Marine Fisheries Commission.

Mr. John Thomson, Fisheries Research Board of Canada, was elected Chairman for the coming year. Seattle was selected as the site of the 1965 meeting. -- E.A. Best.

## 1. BOTTOMFISH

- A. Flatfish: Dover sole were available off northern California and inshore abundance increased off central California but reduced market demand continued to limit effort and landings. English and petrale sole landings were light to moderate at all ports.

The San Francisco fleet was idle for several days as summer delivery prices were negotiated.

Reflecting the market limitations of trawl caught fish, four Eureka vessels shifted temporarily to other fisheries. Two each were rigged for shrimp and albacore fishing.

Landings of sole and animal food species were sampled at all ports.

During June, two petrale and 35 dover sole tags were returned at Eureka where they were released in 1958 and 1962, respectively. A third tagged petrale was recovered off Pt. Sal where it was released in 1963.

The fifth and final cruise of the NAUTILUS in Monterey Bay to collect English sole for age and growth studies was completed.

- B. Rockfish: Landings were light at Eureka and San Francisco. Better catches were made at Fort Bragg and Monterey.

## 2. SHELLFISH

- A. Abalone: During the first two weeks of June, relatively smooth and clear water provided favorable diving conditions in the Morro Bay area. Divers were able to work most of this period and many made good catches. Fifteen boats were operating out of Morro Bay during the month.

Three of the abalone larvae spawned at Morro Bay last month were reported still alive. Other spawnings have been reported, and, from these, a number of individuals are reported alive and growing. Construction of the private hatchery which was started around the first of the month is almost complete. The structure which is 12' x 40' contains a number of wooden fiber glass lined tanks. Water will be pumped from the bay, first passing through a sand filter then into the tanks. It is anticipated the hatchery will be in operation by the first of July.

The first abalone cruise began June 29 at Morro Bay with the NAUTILUS and MOLLUSK. Commercial fishing areas are being sampled for growth and size ranges.

- B. Crab: One of San Francisco's poorest seasons closed June 30. Landings through April totaled 972,041 pounds opposed to 1962-63's catch of 1,309,359 pounds. The season's catch will probably approach our pre-season prediction that landings would be at least 1.1 million pounds.

Eureka is also suffering an extremely poor season with only 713,121 pounds landed through April. Last year Eureka experienced one of its record low seasons with 865,000 pounds landed. However, indications are that at Eureka there will be a better season in 1964-65. Long range reports at

San Francisco are not favorable and indicate crab fishermen at this port will again experience poor fishing next season.

Work continues on the crab larvae paper and the crab bulletin.

- C. Oysters and Clams: Condition factor samples were taken from all producing oyster beds.

Johnson Oyster Company has succeeded in inducing European oysters, Ostrea edulis, to spawn. The larvae have been collected and maintained in an experimental hatchery for approximately 30 days.

Production at Moss Landing has terminated for the summer and Tomales Bay Oyster Company expects to close down after the first part of July.

Leslie Salt Company has placed a number of Pacific Oysters in selected areas in San Francisco Bay as part of an experiment to determine the feasibility of spawning and rearing this species in an outdoor hatchery operation.

- D. Shrimp: Four boats are fishing in Area A from Eureka, two from Crescent City, and one boat from Brookings, Oregon. The boats have been averaging 400-500 pounds per hour in this area.

Our preseason cruise in April and our monitoring of the fishery in May revealed that recruitment had been low and that the total population size was down. As a result the Department recommended that the quota be lowered from 2 million to 500,000 pounds. The Commission took favorable action but requested an immediate re-survey aboard a commercial vessel. The re-survey will be made aboard a commercial shrimp boat out of Eureka. Landings in Area A through June 20 totaled 395,310 pounds. There has been no activity in the other shrimp areas.

### 3. POINT ARGUELLO SURVEY

A field trip was made to the survey area to acquaint personnel with public access to the ocean and assess public facilities in the area. All county and state parks are utilized to capacity during summer months. Fishing varies considerably depending upon facilities available; pier, boat-launching equipment and type of beach.

The project leader attended a joint meeting of the Vandenberg Air Force Base and Lockheed skin diving clubs at Lompoc to acquaint them with the project.

Compiling of information on commercial fish landings in the area continues. Mel Odemar completed a draft report on the shrimp resource in the survey area prior to his transfer to D.J. Project F-19-R.

### 4. PELAGIC FISH

- A. Sardines: San Pedro-Santa Monica market landings approximated 225 tons, considerably more than the 73 tons landed during June, 1963. All fish landed were exceptionally large with the bulk ranging in length between 230-260 mm Bl. with some as large as 270 and 280 mm. Most landings were

from the east end of Santa Catalina Island or Cortez Bank.

Previously reported (March-May) small sardines, 140-180 mm, were not seen during June.

- B. Mackerel: Central California landings totaled 228 tons of jack mackerel, all from Monterey Bay.

Southern California jack mackerel landings approximated 6,200 tons, nearly twice the 1963 June landings despite poor weather which curtailed fishing during part of the month. Pacific mackerel landings, 1,100 tons, were about the same as last year. Cortez Bank was the hot spot for both day and night fishing.

- C. Anchovy: Only 67 tons were landed, 57 in Monterey and 10 in southern California.

- D. Squid: Monterey landings totaled 892 tons.

- E. Live Bait: The supply of good sized anchovies for live bait exceeded demand during June, although demand is on the increase. This is normal for this time of the year.

Bait fishermen are anxiously awaiting the start of local albacore season.

A new 57 foot, steel hull, bait boat, the SEA BROCK, was launched and is now operating in the San Diego area. This boat has a capacity of 1,000 scoops.

Two new marinas, in southern California, now have live bait, the Ventura Marina and the Channel Islands Marina near Port Hueneme.

- F. Aerial Survey: Due to bad weather only one of three scheduled flights was completed. A large concentration, 590 small schools, of northern anchovies were sighted in the Ventura-Port Hueneme area; 135 between Point Conception and Carpinteria; and 26 schools near Dana Point. Red tide prevailed near shore between Point Dume and Dana Point.

- G. Sea Surveys: A survey cruise was completed in southern California waters by the R/V ALASKA. Anchovies predominated in the catches; no sardines were located. Attempts to catch fish located by spotters in Departmental aircraft were unsuccessful because no schools were sighted in the area where the vessel was working. Biologist-divers observed the midwater trawl in action. The divers rode and moved around the net while it was being towed. Dirty water precluded taking movies. We hope to use the divers' observations to make adjustments in the net so that it will fish more efficiently.

## 5. TUNA

- A. Albacore: The N.B. SCOFIELD returned to port June 23, after a cooperative preseason cruise with the BLACK DOUGLAS of the U.S. Bureau of Commercial Fisheries. The N.B. SCOFIELD traveled more than 3,000 miles, while surveying an area between the latitudes of Guadalupe Island, Baja California and Monterey, California and offshore 600 miles. Fifty-



seven albacore were taken; the first on June 9, in 59.9°F water, about 540 miles due west of Pt. Buchon; four on June 18, 360 miles west of San Diego; and the remainder June 20, 21, and 22, approximately 20 miles south of San Juan Seamount.

During the cruise, 78 bathythermograph casts were made; these were read, coded, and forwarded to the National Oceanographic Data Center, Washington D.C. A 10-meter Nansen bottle cast also was made at each station; the water samples were saved for salinity determination. Detailed weather observations were recorded every six hours and radioed to the U.S. Weather Bureau. Daily broadcasts to commercial and sportfishing fleets kept them informed about the progress of the survey.

As the SCOFIELD cruise terminated, a small commercial fleet began fishing in the San Juan Seamount area where some good catches were reported prior to the onset of inclement weather.

- B. Bluefin Tuna: An estimated 500 tons were purse seined during a short flurry of activity near Lusitania Bank, Baja California in mid June, and an additional 60 tons were caught near Guadalupe Island. Some 221 tons have arrived in port; one tagged bluefin was caught in a 35 ton set made near Lusitania Bank. It was marked last August about 15 miles east of San Clemente Island, California. This is more than 600 miles northwest of where it was caught 306 days later. Data collecting continued, but analysis was halted to prepare Marine Resources Inventories. Inventories for striped marlin, bluefin tuna, bonito, skipjack and yellowfin tuna are in preparation, and a standard form was designed for rapid processing.

Population identity research using eye lense proteins began this month, and routine handling procedures were established after a "shake down" of the new equipment.

- C. Miscellaneous: Three new seasonal aids were appointed this month: David Hoopagh, Mike Frame, and Bill Burton.

In June, yellowfin tuna fishing was excellent in the Gulf of California near Cerralbo Island; the fleet worked the Revilla Gigedo Islands with less success. As the catch neared the proposed IATTC quota for 1964, opposition developed from some of the fishermen, who refused to let the IATTC copy their logs.

The bluefin purse seine fleet reported several Japanese longliners operating off Mexico, in the Gulf of California and north to Lusitania Bank, Baja California. Members of the California fleet have been hailed by Japanese vessels and asked for charts of the Gulf of California.

A foreign flag trawler, presumed to be Russian, was sighted west of Cortez Bank by a local charter boat on June 23.

## 6. SPORTFISH

- A. Partyboat: Approximately 3,300 trip logs were submitted by 278 partyboats in May. Kelp and sand bass, barracuda and yellowtail catches dropped considerably from a year ago. April and May water temperatures were well below average, probably the chief cause of lower catches. Preliminary

catch totals, accumulated through May, compare with 1963 as follows:

<u>Through May</u>	<u>1964</u>	<u>1963</u>
Rockfish	315,595	322,311
Kelp & Sand Bass	173,823	223,552
Bonito	141,158	122,866
Barracuda	87,570	107,826
Calif. Halibut	47,674	44,824
Salmon	21,733	24,533
Yellowtail	5,413	11,319
Striped Bass *	5,284	3,495

\* San Pablo Bay and Delta area striped bass included in 1964 total, but not 1963.

A school of silver salmon continues to frequent Los Angeles Harbor, yielding small catches daily. All told, several hundred fish have been landed, mostly in the vicinity of a bait receiver anchored within the harbor.

Two new partyboat landings, one at Ventura and the second at Oxnard, have started operations. Both are managed by boatmen having years of experience in the business.

A monthly collection of 12 kelp bass was obtained near San Pedro. Seven sand bass tag returns were processed during the month, 4 from a recent tag lot at Newport Bay, and 3 from a 1963 group released near San Clemente.

Follow-up sportcatch data, relative to the Catalina Island Bill (AB 2936) were prepared for comparison with a prior report.

- B. Ocean Fish Habitat Development (DJ F17R7): Progress continued as the final project report neared completion. Although this report was scheduled to be in manuscript form at the project's conclusion, June 1964, it will not be ready until October. Various interruptions, such as our reimbursed contract work, assistance to associated programs and administrative requests and procedures, coupled with the vast and complex amounts of data that we collected, have all contributed to our lagging behind schedule.

The buoy marking the Redondo Beach streetcar reef broke loose again, making a clean sweep for this area. Not one of the 3 artificial reefs is marked. Because of the time and effort involved in relocating and rebuoyming the reefs makes it impossible for project personnel to keep to their schedule, a different arrangement should be made. A team should be assigned the job of conducting preventative maintenance and replacing worn or defective buoys and chain before they are lost. Since this work can be accomplished from the surface the diving biologists can be freed for their more specialized and productive research.

A proposed artificial reef site was surveyed, 2.7 miles west of the Ventura Marina. The sandy-silt bottom appeared quite satisfactory for reef building. The substrate is similar in composition to that at the WCB experimental reef site off Santa Monica Canyon.

Project divers assisted the Pelagic Fishery Investigation by observing their mid-water trawl in action. It was planned that underwater movies would be taken, but this aspect was postponed due to adverse water clarity. The divers were able to ride the net, however, and the information gained will be used in evaluating the net's design.

The report "Survey of the Marine Environment Offshore of San Elijo Lagoon, San Diego County" was presented to and accepted by the San Diego Regional Water Pollution Control Board, completing this contract.

- C. Blue Rockfish Management Study (DJ F19R3): Routine partyboat and skiff sampling for species composition, length frequencies, and age determinations was continued. All ports from Princeton to Avila were surveyed.

The Sonoma-Marin fishing map was submitted to the State printer and the final map of Del Norte, Humboldt and Mendocino was completed except for final delineation.

Intensive tagging was continued at the Monterey breakwater. A total of 190 juvenile blue rockfish was tagged and an additional 31 tagged blue rockfish were caught and re-released. The blue rockfish tagged and caught four times in May was caught twice more in June.

Other species tagged at the breakwater were: 1 wolf-eel, 1 black perch, 3 copper rockfish, 2 olive rockfish, 6 bocaccio, 1 black-and-yellow rockfish, 2 white seaperch, 3 black rockfish, 2 yellowtail rockfish, and 1 shiner perch.

One blue rockfish was returned by a partyboat fisherman. The fish had not moved and was at liberty one year and eight months.

- D. Southern California Marine Sport Fish Survey (DJ F20R2): Sampling of skiffs and yachts at launching and mooring sites in southern California has continued on a routine basis.

Job Completion and Progress reports, a requirement of Federal Aid Projects, were completed and submitted to the Dingell-Johnson coordinator.

A biennial report for the period July 1962 through June 30, 1964 was written and submitted to the Marine Resources Operations editor.

Work in process on the 1963 pier and jetty sport fishing survey included data analysis, debugging of the fortran program to run the supplemental data and writing the introduction and methods sections of a paper describing the results of our work: title, Southern California Marine Sport-fishing Survey, Piers and Jetties - 1963.

On June 18 and 19 Leo Pinkas attended the in-service training session at Sacramento on Cultural Differences.

## 7. SPECIAL PROJECTS

- A. Southern California: On June 16 sludge and fish samples were obtained from the terminus of the Hyperion sludge outfall by the vessel MARINE SURVEYOR. These were taken immediately to the Neurological Laboratories

at L.A. County General Hospital for analysis by Dr. Finley Russell and his staff. Dr. Sherwin of the U.S.C. Cancer Laboratories also viewed the specimens and will do work on the effects of this sludge on marine organisms.

Carlisle met with Dr. Richard Boolootian at U.C.L.A. to view the aerial photos taken during the last sea otter survey. There is good agreement between the visual and the photographic counts.

Doyle Gates and Carlisle traveled to San Diego to watch a demonstration of a pump to be used in taking ghost shrimp. Proposed regulations covering this operation were before the Fish and Game Commission.

A meeting with Al Aplin, Norm Abramson, Jack Baxter and project personnel was held at Terminal Island to discuss joint problems of the San Francisco Bay Study and the Santa Monica Bay Study.

Checks at Imperial Beach Pier indicate heavy fisherman use and good success. Because of the newly installed reef around its periphery, fishermen are catching good numbers of rocky bottom fishes; kelp bass, sand bass, yellow-tail, rockfish, white seabass and sculpin.

A check was made on the proposed Ocean Beach Pier site.

#### B. Northern California:

All six stations of the San Francisco Bay Study were sampled from the NAUTILUS. Two routine 20-minute tows with surface and bottom gear were made at each station. Tows were also made at night at three stations. The replication of samples provides a check on adequacy of the samples taken.

On June 1, Aplin visited the Pacific Marine Station to discuss common problems.

On June 22, Mr. Lee Christianson of Stanford Research Institute and Aplin visited Mr. Al Vierra at Moss Landing to discuss seed production and pond culture of oysters. Mr. Vierra's family have owned potential oyster beds in Elkhorn Slough for over a hundred years but there has been little actual production.

On June 24, Aplin visited the laboratory of the Pacific Gas and Electric Company in Emeryville to discuss pond culture of shellfish with Mr. James Adams, a company biologist.

### 8. BIOSTATISTICS

#### A. Data Processing

Regular Reports: May cannery and processor reports were tabulated and a letter summarizing the tuna case pack was distributed.

May partyboat catch records were tabulated and a letter summarizing the catch was distributed.

A list of vessels which had been previously numbered and had applied for new numbers in 1963 was transmitted to the field offices. It is hoped that field offices will inform the vessel operators of their previous numbers and obtain \$4.00 duplicate plates.

April statistical reports summarizing landings and shipments were completed.

Live bait reports for the year 1963 were decoded and distributed.

Special Reports:

Blue rockfish reports for 1961 and 1962 catches were transmitted to Menlo Park.

Upon request from the Los Angeles Department of Water and Power, data were prepared for commercial and sport catches for the periods 1958 through 1963 in the Malibu area. These data were being considered in light of locating an atomic energy power generator at Coral Beach.

Mackerel landings from May, 1963, through April, 1964, were prepared for Pelagic Fish Investigations.

Bonito catches by block origin, 1962, were prepared for Bob Bell.

Salmon and crab origin reports for northern California from 1952 through 1962 were prepared and transmitted to Mr. Bissell. These reports were to be used at a meeting in Crescent City on seismic exploration.

Work in Progress:

Preliminary bait records for 1963 were transmitted to Ken Aasen for editing before running completed reports.

Editing of June market and cannery receipts are in process.

The check sheets for the 1963 value reports are in process. These are completed prior to running the 1963 block origin reports.

Universal Data Processing Corporation is presently working on transferring 1961 commercial fish landing data to magnetic tape. The bulk of the work should be completed prior to the close of this month.

Field: Problems concerning the editing of fish receipts and processor reports were taken to the respective dealers in the Los Angeles-Newport area for clarification.

Discussions were held with Captain Waggoner and Fred Kemp on June 22 at Menlo Park regarding processed sport caught fish, bait fish varieties being received from fishermen, and potential perch resources in San Francisco Bay.

On June 23 a discussion was held with personnel of the Leslie Salt Company at Newark, California, on potential development of the Leslie Salt Ponds.

B. Technical Assistance and Biometrical Analysis

Computers:

A Bertalanffy growth curve program, BGC II, was being debugged at Western Data Processing Center.

9. VESSELS

ALASKA

The ALASKA conducted a three weeks Pelagic Fish Study in the waters of southern California and the Channel Islands.

N.B. SCOFIELD

From the 1st through the 23rd the N.B. SCOFIELD was engaged in a cooperative albacore study with the U.S.F.W.S. vessel BLACK DOUGLAS. The area covered was that of the eastern north Pacific Ocean.

NAUTILUS

From June 8th through the 15th the NAUTILUS conducted a bottomfish study in Monterey Bay, and one week each Delta and San Francisco Bay Study. On the 28th the vessel sailed for Morro Bay on a two week abalone study off Morro Bay and vicinity.

MOLLUSK

From the 1st through the 24th, the MOLLUSK was being outfitted for summer abalone work. On the 25th the vessel was transported to Morro Bay for two weeks of abalone study in the vicinity of Morro Bay.

10. MISCELLANEOUS

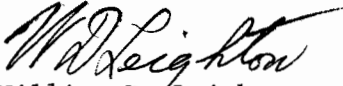
A. Meetings, Talks and Visitors:

- June 3 - Mr. Arthur W. Werry and Mr. Larry Bressler of the Leslie Salt Company visited the Menlo Laboratory to discuss shellfish culture. The salt company is conducting a short term evaluation of certain ponds for growing shellfish.
- June 3 - Seminar at U.S.C. given by Dr. Andreas B. Rehnitz on "Observations of Biological Importance from Deep Submersibles" - Carlisle.
- June 5 - Baxter, Carlisle and Abramson met with Aplin at the T.I. Laboratory to discuss the San Francisco Bay Study.
- June 9 - Oral presentation of the contract report, "Survey of the Marine Environment Offshore of San Elijo Lagoon, San Diego County" to the San Diego Regional Water Pollution Control Board, in San Diego. - Turner.

- June 11 - Talk on habitat development to members of the Surf and Sage Club in Santa Monica. - Carlisle.
- June 15-17 - Pacific Coast Statistical Association meeting at Olympia, Washington, attended by Greenhood and Mackett.
- June 17 - Leo Pinkas spoke to Troop 119, Boy Scouts of America, Long Beach, on project activities and conservation of marine resources.
- June 17 - Talk given to Burbank Anglers fishing club. - Given.
- June 18 - Abramson and Jensen visited Westinghouse's Astrodynamics Laboratory at Newbury Park to see a demonstration of a new device for visual input to computers.
- June 19 - Talk on Japanese Shellfish Rearing Methods to members of the American Malacological Union, Pacific Division, Asilomar. - Cox.
- June 19 - Talk to Vandenburg and Lockheed Missile Base Skindivers on abalone. - Cox.
- June 23-24 - The fifth annual meeting of the International Trawl Technical sub-committee was held at Menlo Park. A wide range of topics pertaining to trawl fisheries were reviewed and discussed. Gary Smith was appointed recording secretary for the two day meeting. J.A. Thomson of the Fisheries Research Board of Canada was elected as the future chairman of the group.
- June 29 - Baxter presented a talk for a group of teacher-counselors interested in job opportunities in the Department of Fish and Game.

B. Personnel:

- June 1 - Jack Hanson was promoted to Marine Biologist II and transferred to Lake Tahoe.
- June 20 - Charles W. Haugen was appointed Aquatic Biologist I, Project F-20-R.
- June 22 - Julia A. Radovic was appointed Intermediate Typist.
- June 30 - Betty Wright, Intermediate Account Clerk, separated.

  
William D. Leighton  
Acting Manager